

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A measuring transformer for comparing a current flowing through a conductor to a reference current comprising:
 - a magnetic circuit formed by a toroidal core;
 - the conductor through which the current flows and which is enclosed by the toroidal core;
 - a secondary winding arranged on the toroidal core;
 - a magnetic flux measuring element which is arranged in a gap of the toroidal core and which is sensitive to a magnetic field in the gap;
 - a reference setting unit for providing on the secondary winding a predefined reference current, the magnetic flux measuring element being adapted to deliver a difference signal representative of the difference between the reference current and the current flowing through the conductor.
2. (Previously Presented) A measuring transformer according to claim 1, wherein the magnetic flux measuring element is a Hall element.
3. (Previously Presented) A measuring transformer according to claim 1, further comprising an amplifier connected downstream of an output of the magnetic flux measuring element for amplifying an electrical output signal of the magnetic flux measuring element.

4. (Previously Presented) A measuring transformer according to claim 1, further comprising a control unit for controlling the current flowing through the conductor, in such a way that the current flowing through the conductor approximates to the reference current.

5. (Previously Presented) A measuring transformer according to claim 1, further comprising a superimposition means connected downstream of the magnetic flux measuring element for superimposition of the reference current with an output signal of the magnetic flux measuring element for determining an absolute value of the current flowing through the conductor.

6. (Previously Presented) A measuring transformer according to claim 1, further comprising a control unit electrically coupled to the magnetic flux measuring element and the reference setting unit for controlling or regulating the current flowing through the conductor.

7. (Currently Amended) A measuring transformer according to claim 6, further comprising:

an inverter, wherein the current flowing through the conductor is an inverter output current.

8. (Canceled)

9. (Canceled)

10. (Previously Presented) A measuring transformer according to claim 1, wherein the reference setting unit is a current source.

11. (Previously Presented) A measuring transformer according to claim 6, wherein the control unit is a microcontroller.

12-22. (Canceled)

23. (New) A method for using a measuring transformer for comparing a current flowing through a conductor to a reference current, the method comprising:

forming a magnetic circuit with a toroidal core;

flowing the current through the conductor which is enclosed by the toroidal core, the toroidal core having a secondary winding arranged thereon;

sensing a magnetic field using a magnetic flux measuring element which is arranged in a gap of the toroidal core and which is sensitive to the magnetic field in the gap;

providing on the secondary winding a predefined reference current from a reference setting unit; and

delivering a difference signal from the magnetic flux measuring element, the difference signal representative of the difference between the reference current and the current flowing through the conductor.

24. (New) The method of claim 23, wherein sensing the magnetic flux field using a magnetic flux measuring element further comprises sensing using a Hall element.

25. (New) The method of claim 23, further comprising amplifying an electrical output signal of the magnetic flux measuring element with an amplifier connected downstream of an output of the magnetic flux measuring element.

26. (New) The method of claim 23, wherein flowing the current through the conductor further comprises controlling the current flowing through the conductor using a control unit in such a way that the current flowing through the conductor approximates to the reference current.

27. (New) The method of claim 23, further comprising:
superimpositioning the reference current with an output signal of the magnetic flux measuring element using a superimposition means connected downstream of the magnetic flux measuring element; and
determining an absolute value of the current flowing through the conductor.
28. (New) The method of claim 23, further comprising controlling or regulating the current flowing through the conductor using a control unit electrically coupled to the magnetic flux measuring element and the reference setting unit.
29. (New) The method of claim 28, wherein the current flowing through the conductor is an inverter output current.
30. (New) The method of claim 28, wherein the control unit is a microcontroller.
31. (New) The method of claim 23, wherein the reference setting unit is a current source.